DETAILED ACTION

1. Applicant has cancelled claims 5, 8, 31 & 32. The examiner acknowledges it.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1, 2, 4-7, 9-15, and 24-30 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Amended claim language in claims 1, 6, 9, and 24 recites "Ec/Io value remains lower" however, this is interpreted as the system does not control Ec/Io value at all (as oppose to claimed feature "maintained lower" in previous amendment that was supported by originally filed specification), the examiner is unable to find support for "Ec/Io value remains lower". This constitutes new subject matter. Appropriate correction is required.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 6, 7, and 9-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Claim 6 step (d) recites "if it is determined at step (c) that the time lapse exceeds Hd, activating the CDMA-2000 modem, and then determining whether the WCDMA call has been terminated, wherein the CDMA-2000 modem is activated before the MM-MB terminal leaves the overlay zone and while the WCDMA modem is still being activated to handle the WCDMA call; It is unclear to the examiner that when WCDMA modem is actively handling the call, why there is a need for WCDMA modem to still being activated? for the purpose of compact prosecution the examiner assumes "the CDMA-2000 modem is activated before the MM-MB terminal leaves the overlay zone and while WCDMA modem is actively handling the WCDMA call".

7. Claim 6 also recite "while the MM-MB terminal is handling the WCDMA call by the WCDMA modem which is being activated" The examiner assumes this feature as While the MM-MB terminal is handling the WCDMA call by the active WCDMA modem.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. **Claims 1-2, 4-7, and 9-30** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Amerga et al (US Patent # US 7,110765 B2)** as applied to claims above, herein after referred as **Amerga**, and further in view of **Choi et al.(US Patent # US 7,096020 B2)** herein after referred as **Choi**.

11. **Regarding claim 1, Amerga** discloses a method of switching between a WCDMA modem and a CDMA-2000 modem of an MM-MB (multimode-multiband) terminal **(Amerga: Fig 3 & column 5 lines [43-48] discloses system which can perform modem switching (WCDMA & CDMA-2000) in a system, which is multimode-multiband functionality)**, when the MM-MB terminal being in a WCDMA idle state **(Amerga: column 5 lines [43-46] discloses WCDMA system)** moves from an overlay zone into a CDMA-2000 zone **(Amerga: column 5 lines [47-48] discloses CDMA2000 system)**, said method comprising the steps of:

(a) receiving a WCDMA signal transmitted from a WCDMA system **(Amerga: Fig 2: tuning receiver 220)**, and measuring **(Amerga: Column 6, lines [12-16] Signal strength estimator)** an Ec/Io (energy of carrier/interference of others) value by using the WCDMA signal **(Amerga: Col 8 line [45] discloses Ec/Io measurement)**;

(b) determining **(Amerga: Column 6 lines [64-67] decision block 320, column 7 lines [1-6])** whether the Ec/Io **(Amerga: Column 8, lines [45-46], Fig 5A & 5B, step 330)** value is lower than a predetermined CDMA-2000 ON threshold THoN **(Amerga:**

Column 8 lines [47] Q-qual min= threshold for minimum required quality level of the cell);

(c) if it is determined at step (b) that the Ec/Io value is lower than THoN **(Amerga: Column 8 lines [35] Equation Squal)**, starting to measure a time lapse **(Amerga: Column 8, lines [11-14] fig 3: DRX cycle)**, which is a cumulative time during which the Ec/Io value remains lower than the CDMA-2000 ON threshold THoN **(Amerga: Fig 5A & column 10 lines [44-49] discloses a timer that indicates how long (cumulative) a cell has met the selection criteria)**, and determining whether the time lapse exceeds a preset CDMA-2000 ON condition time Hd **(Amerga: Column 9 lines [15] N cycles)**;

(d) if it is determined at step (c) that the time lapse exceeds Hd, activating the CDMA-2000 modem **(Amerga: Column 9 lines [12-17])**, wherein the CDMA-2000 modem is activated before the MM-MB terminal leaves the overlay zone and while the WCDMA modem is still being activated to keep the MM-MB terminal in the WCDMA idle state; and

(e) performing an initialization for a CDMA-2000 system to switch the MM-MB terminal from the WCDMA idle state into a CDMA-2000 idle state **(Amerga: Fig 5A & 5B, Column 9 lines [12-17][21-57])**.

12. **However**, **Amerga** fails to disclose specifically Multi Mode-Multi Band terminal which has CDMA-2000 modem & WCDMA modem & the CDMA-2000 modem is activated before the MM-MB terminal leaves the overlay zone and while the WCDMA modem is still being activated to keep the MM-MB terminal in the WCDMA idle state. **However**, the examiner maintains that it was well known in the art to provide Multi

Mode-Multi Band terminal which has CDMA-2000 modem & WCDMA modem **(Choi: Fig 2, 3 & Column 3 lines [56-57])** & the CDMA-2000 modem is activated before the MM-MB terminal leaves the overlay zone and while the WCDMA modem is still being activated to keep the MM-MB terminal in the WCDMA idle state as taught by **Choi (Choi: Col 6 lines [58] - Col 7 lines [17] discloses process of Soft handoff between WCDMA and CDMA2000, hence current call connection has to remain active till the next call connection is confirmed and functional before releasing current connection).**

13. **In** a similar field of endeavor **Choi** discloses a System and method for implementing a handoff using a multiparty service in a mobile communication system. In addition, **Choi** discloses Multi Mode-Multi Band terminal which has CDMA-2000 modem, WCDMA modem & the CDMA-2000 modem is activated before the MM-MB terminal leaves the overlay zone and while the WCDMA modem is still being activated to keep the MM-MB terminal in the WCDMA idle state.

14. **Therefore**, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify **Amerga** by specifically providing a terminal with Multi Mode-Multi Band terminal which has CDMA-2000 modem & WCDMA modem & the CDMA-2000 modem is activated before the MM-MB terminal leaves the overlay zone and while the WCDMA modem is still being activated to keep the MM-MB terminal in the WCDMA idle state as taught by **Choi** for the purpose of implementing Soft handoff between heterogeneous networks **(Choi: Column 2 lines [41-45])**.

15. **Regarding claim 2, Amerga** in view of **Choi** discloses the method of claim 1, wherein the MM-MB terminal **(Choi: Fig 2, 3 & Column 3 lines [56-57])** inspects a CPICH (common pilot channel) periodically to receive the WCDMA signal at step (a) **(Amerga: column 7 lines [59-65])**. This claim is rejected for the same motivation as claim 1.

16. **Regarding claim 4, Amerga** in view of **Choi** discloses everything in claim 1 as above, along with initialization at step (e) is performed 'through a system determination sub state **(Amerga: Fig 5A: 504)**, a pilot channel acquisition sub state **(Amerga: Fig 5A: 502)** and a synchronous channel acquisition sub state **(Amerga: Fig 5A: 552)**. This claim is rejected for the same motivation as claim 1.

17. **Regarding claim 5, Amerga** in view of **Choi** discloses everything in claim 1 as above along with after being switched **(Amerga: Fig 5A, 5B & column 9 lines [12-17][21-57])** into the CDMA-2000 idle state at step (e), the MM-MB terminal deactivates the WCDMA modem **(Amerga: column 8 lines [11-28])**. This claim is rejected for the same motivation as claim 1.

18. **Regarding claim 6, Amerga** discloses a method of switching between a WCDMA modem and a CDMA-2000 modem of an MM-MB terminal, when the MM-MB terminal moves from an overlay zone into a CDMA-2000 zone while handling a WCDMA call, said method comprising the steps of:

(a) while the MM-MB terminal is handling the WCDMA call by the WCDMA modem which is being activated **(The examiner assumes this feature as While the MM-MB terminal is handling the WCDMA call by the active WCDMA modem i.e. process of soft handover)**, receiving a WCDMA signal transmitted from a WCDMA system, and measuring an Ec/Io (energy of carrier/interference of others) value by using the WCDMA signal **(Amerga: column 8 lines [30-48] discloses measurement of Ec/Io using WCDMA signal)**;

(b) determining **(Amerga: column 6 lines [64-67] decision block 320, column 7 lines [1-6])** whether the Ec/Io value **(Amerga: column 8 lines [45-46], Fig 5A & 5B, step 330)** is lower than a predetermined CDMA- 2000 ON threshold THoN **(Amerga: column 8 lines [47] Q-qual min = threshold for minimum required quality level of the cell)**;

(c) if it is determined at step (b) that the Ec/Io value is lower than THoN **(Amerga: column 8 lines [35] Equation Squal)**, starting to measure a time lapse **(Amerga: Column 8 lines [11-14], Fig 3:DRX cycle)**, which is a cumulative time during which the Ec/Io value remains lower than the CDMA-2000 ON threshold THoN **(Amerga: Fig 5A & Column 10 lines [44-49] discloses a timer that indicates how long (cumulative) a cell has met the selection criteria)**, and determining **(Amerga: column 8 lines [11-14], Fig 3: determining based on consecutive DRX cycles)** whether the time lapse exceeds a preset CDMA-2000 ON condition time Hd **(Amerga: column 9 lines [15] N cycles)**;

(d) if it is determined at step (c) that the time lapse exceeds Hd, activating the CDMA-2000 modem **(Amerga: column 9 lines [12-17])**, and then determining whether the WCDMA call has been terminated **(Amerga: Fig 5A & 5B : 550, 552)**, wherein the CDMA-2000 modem is activated before the MM-MB terminal leaves the overlay zone and while the WCDMA modem is still being activated to handle the WCDMA call; and (e) if the WCDMA call is determined at step (d) to have been terminated, performing an initialization for a CDMA-2000 system to switch **(Amerga: Fig 5A, 5B & column 9 lines [12-17][21-57])** the MM-MB terminal into a CDMA-2000 idle state **(Amerga: column 9 lines [12-17][21-23])**.

However, **Amerga** fails to disclose specifically when the MM-MB terminal moves from an overlay zone into a CDMA-2000 zone while handling a WCDMA call & while the MM-MB terminal is handling the WCDMA call by the WCDMA modem which is being activated (The examiner assumes this feature as While the MM-MB terminal is handling the WCDMA call by the active WCDMA modem), receiving a WCDMA signal transmitted from a WCDMA system, and measuring an Ec/Io (energy of carrier/interference of others) value by using the WCDMA signal. **However, the examiner** maintains that it was well known in the art to provide when the MM-MB terminal moves from an overlay zone into a CDMA-2000 zone while handling a WCDMA call as taught by **Choi (Choi: Col 6 lines [58] - Col 7 lines [17] discloses Dual band dual mode terminal, further on column 4 lines [57-60] discloses terminal also supplies power to CDMA unit i.e. terminal moves from overlay zone in to CDMA zone while handling a WCDMA call)** while the MM-MB terminal is handling the

WCDMA call by the WCDMA modem which is being activated **(The examiner assumes this feature as "While the MM-MB terminal is handling the WCDMA call by the active WCDMA modem" i.e. process of soft handover)**, receiving a WCDMA signal transmitted from a WCDMA system, and measuring an Ec/Io (energy of carrier/interference of others) value by using the WCDMA signal**.(Choi: Fig 2, 3 & Column 3 lines [56-57])** & the CDMA-2000 modem is activated before the MM-MB terminal leaves the overlay zone and while the WCDMA modem is still being activated to keep the MM-MB terminal in the WCDMA idle state as taught by **Choi (Choi: Col 6 lines [58] - Col 7 lines [17] discloses process of Soft handoff between WCDMA and CDMA2000, hence current call connection has to remain active till the next call connection is confirmed and functional before releasing current connection).**

19. **In** a similar field of endeavor **Choi** discloses a System and method for implementing a handoff using a multiparty service in a mobile communication system. In addition, **Choi** discloses when the MM-MB terminal moves from an overlay zone into a CDMA-2000 zone while handling a WCDMA call & while the MM-MB terminal is handling the WCDMA call by the WCDMA modem which is being activated, receiving a WCDMA signal transmitted from a WCDMA system, and measuring an Ec/Io (energy of carrier/interference of others) value by using the WCDMA signal & the CDMA-2000 modem is activated before the MM-MB terminal leaves the overlay zone and while the WCDMA modem is still being activated to keep the MM-MB terminal in the WCDMA idle state.

20. **Therefore**, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify **Amerga** by specifically providing a terminal with when the MM-MB terminal moves from an overlay zone into a CDMA-2000 zone while handling a WCDMA call & while the MM-MB terminal is handling the WCDMA call by the WCDMA modem which is being activated, receiving a WCDMA signal transmitted from a WCDMA system, and measuring an Ec/Io (energy of carrier/interference of others) value by using the WCDMA signal & the CDMA-2000 modem is activated before the MM-MB terminal leaves the overlay zone and while the WCDMA modem is still being activated to keep the MM-MB terminal in the WCDMA idle state as taught by **Choi** for the purpose of implementing Soft handoff between heterogeneous networks **(Choi: Column 2 lines [41-45])**.

21. **Regarding claim 7, Amerga** in view of **Choi** discloses the method of claim 6, wherein the MM-MB terminal inspects a CPICH (common pilot channel) periodically to receive the WCDMA signal at step (a) **(Amerga: Column 8 lines [59-65])**; and the CDMA-2000 modem is activated in step (d) while the WCDMA call is still being handled by the WCDMA modem **(Choi: Column 7 lines [09-17].** This claim is rejected for the same motivation as claim 6.

22. **Regarding claim 9, Amerga** in view of **Choi** discloses the method of claim 6, wherein, if the WCDMA call is determined at step (d) to have not been terminated, the method further includes the steps of:

(d1) determining **(Amerga: Fig 3:320)** whether the Ec/Io value **(Amerga: Column 8 lines [45-46], Fig 5A, 5B , step 330)** is higher than a predetermined CDMA- 2000 OFF threshold THoFF **(Amerga: Fig 5A & Column 10 lines [44-49])** which is lower than THoN **(Amerga: $S_{intrasearch}$ Floor (higher threshold))**;

(d2) if it is determined at step (d1) that the Ec/Io value **(Amerga: Column 8 lines [45-46], Fig 5A, 5B , step 330)** is higher than THoFF, starting to measure another time lapse, which is a cumulative time during which the Ec/Io value remains higher than THoFF **(Amerga: Col 10 lines [44-49] discloses use of timers to calculate how long the cell criteria was met, hence it is cumulative time, also further discloses in Col 9 lines [24-42] regarding various different way to use threshold to trigger monitoring cell, applicant is using a range with upper and lower bound, Amerga is using $S_{intrasearch}$ Floor (higher threshold))**, and determining whether said another time lapse exceeds a preset CDMA-2000 OFF condition time Hc **(Amerga: Fig 5A: 508, 510 & Column 9 lines [09-21])**; and

(d3) if it is determined at step (d2) that said another time lapse exceeds Hc, deactivating the CDMA-2000 modem that has been activated at step (d) and returning to step (a) **(Amerga: Fig 5A: 508, 510 & Column 9 lines [09-21])**. This claim is rejected for the same motivation as claim 6.

23. **Regarding claim 10, Amerga** in view of **Choi** discloses the method of claim 9, wherein, if it is determined at step (d1) that the Ec/Io value is not higher than THoFF the MM-MB terminal returns to step (d) to determine **(Amerga: Fig 5A: 508, 510 & Column**

9 lines [09-21]) once more whether the WCDMA call has been terminated This claim is rejected for the same motivation as claim 9.

24. **Regarding claim 11, Amerga** in view of **Choi** discloses the method of claim 9, the CDMA-2000 modem is deactivated at step (d3) regardless of whether the Ec/Io value is higher than THoN or not **(Amerga: Fig 5A: 508, 510 & Column 9 lines [09-21])**. This claim is rejected for the same motivation as claim 9.

25. **Regarding claim 12, Amerga** in view of **Choi** discloses the method of claim 10, wherein, if it is determined at step (d2) that the another time lapse does not exceed the CDMA-2000 OFF condition time Hc the MM-MB terminal returns to step (d) to determine once more whether the WCDMA call has been terminated **(Amerga: Fig 5A: 506, 508 & 554)**. This claim is rejected for the same motivation as claim 10.

26. **Regarding claim 13, Amerga** in view of **Choi** discloses the method of claim 6, wherein step (e) further includes the sub-steps of:

(el) inspecting another service channel FA (frequency assignment) of the WCDMA system **(Amerga: Fig 5B: 510)**;

(e2) determining whether another WCDMA signal is found **(Amerga: Fig 5B:512, 514)**; and

(e3) if said another WCDMA signal is found, switching the MM-MB terminal into a

WCDMA idle state **(Amerga: Fig 5B:514 & Column 4 lines [58-60])**. This claim is rejected for the same motivation as claim 6.

27. **Regarding claim 14, Amerga** in view of **Choi** discloses the method of claim 13, wherein, if it is determined at sub- step (e2) that no other WCDMA signal is found, the MM-MB terminal performs said initialization into the CDMA-2000 system to be switched **(Amerga: Fig 5A & 5B & Column 9 lines [12-17][21-57])** into said CDMA-2000 idle state **(Amerga: Fig 3:330-370 & Column 8 lines [65-68])**. This claim is rejected for the same motivation as claim 13.

28. **Regarding claim 15, Amerga** in view of **Choi** discloses the method of claim 14, wherein, after being switched **(Amerga: Fig 5A & 5B & Column 9 lines [12-17][21-57])** into the CDMA-2000 idle state, the MM-MB terminal deactivates the WCDMA modem. This claim is rejected for the same motivation as claim 14 along with claim 5 as method of MM-MB terminal deactivating the modem after being switched to a particular state will remain identical.

29. **Regarding claim 16, Amerga** discloses a method of switching between a CDMA-2000 modem and a WCDMA modem of an MM-MB (multimode-multiband) terminal, when the MM-MB terminal being in a CDMA-2000 idle state moves from a CDMA-2000 zone into an overlay zone, said method comprising the steps of:
(a) monitoring **(Amerga: Fig 3:310, 320, 330)** a paging channel of a CDMA-2000

system periodically while maintaining the MM-MB terminal in the CDMA-2000 idle state **(Amerga: Fig 5A, 5B & Column 4 lines [58-61] & Column 5 lines [47-48] discloses a paging channel of the serving cell, in this case it will be the CDMA-2000 as MM-MB terminal is maintained in CDMA-2000 idle state)**;

(b) analyzing an overhead message received from the CDMA-2000 system and determining whether the MM-MB terminal is located in the overlay zone **(Amerga: Fig 5A: 504-506-508, & Fig 5B)**;

(c) if the MM-MB terminal is determined to be located in the overlay zone, activating the WCDMA modem **(Amerga: Fig 3:350-360)** while maintaining the CDMA-2000 modem in an activated state **(The examiner assumes this feature as "While the MM-MB terminal is handling the CDMA2000 call by the active CDMA modem" i.e. process of soft handover)**; and

(d) performing an initialization process for a WCDMA system to switch **(Amerga: Fig 5A, 5B & Column 9 lines [12-17][21-57])** the MM-MB terminal from the CDMA-2000 idle state into a WCDMA idle state **(Amerga: Fig 3:370)**. **However**, **Amerga** fails to disclose specifically Multi Mode-Multi Band terminal which has CDMA-2000 modem & WCDMA modem & if the MM-MB terminal is determined to be located in the overlay zone, activating the WCDMA modem while maintaining the CDMA-2000 modem in an activated state, **however**, the examiner maintains that it was well known in the art to provide a terminal with multi-mode multi-band which has CDMA modem and WCDMA modem which serves functionally same as MM-MB terminal if the MM-MB terminal is determined to be located in the overlay zone, activating the WCDMA modem while

maintaining the CDMA-2000 modem in an activated state as taught by **Choi (Choi: Fig 2, 3 & Column 3 lines [56-57] & Col 6 lines [58] - Col 7 lines [17] discloses process of Soft handoff between WCDMA and CDMA2000, hence current call connection has to remain active till the next call connection is confirmed and functional before releasing current connection).**

30. **In** a similar field of endeavor **Choi** discloses a System and method for implementing a handoff using a multiparty service in a mobile communication system. In addition, **Choi** discloses Multi Mode-Multi Band terminal which has CDMA-2000 modem & WCDMA modem & if the MM-MB terminal is determined to be located in the overlay zone, activating the WCDMA modem while maintaining the CDMA-2000 modem in an activated state.

31. **Therefore**, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify **Amerga** by specifically providing a terminal with Multi Mode-Multi Band terminal which has CDMA-2000 modem & WCDMA modem & if the MM-MB terminal is determined to be located in the overlay zone, activating the WCDMA modem while maintaining the CDMA-2000 modem in an activated state as taught by **Choi** for the purpose of implementing handoff between heterogeneous networks **(Choi: Column 2 lines [41-45]).**

32. **Regarding claim 17, Amerga** in view of **Choi** discloses the method of claim 16, wherein the MM-MB terminal determines **(Amerga: Fig 5A, 5B)** whether the MM-MB terminal is located in the overlay zone by investigating a base ID of a system parameter

message included in the overhead message analyzed at step (b). **Although Choi** discloses BSC ID, Cell ID **(Choi: Col 2 lines [20-35]). However**, **Amerga** in view of **Choi** fails to disclose explicitly "by investigating a base ID of a system parameter message included in the overhead message analyzed at step (b)".

33. **However** it is obvious to one of ordinary skill in the art that one of the main advantages of implementing CDMA technology is the use of soft handoffs, which allows a mobile device to monitor multiple base stations simultaneously. Further, it is common practice for the current base station to provide information (*i.e.* PN code offsets) of the surrounding neighboring cells in order for the mobile device to easily monitor the signal strength of the handoff candidates in order to facilitate fast acquisition and accurate measurements during soft handover.

34. **Regarding claim 18, Amerga** in view of **Choi** discloses the method of claim 16, wherein, if the MM-MB terminal is not determined to be located in the overlay zone at step (b), the MM-MB terminal returns to step (a) to monitor the paging channel again **(Amerga: Fig 3:310-330)**. This claim is rejected for the same motivation as claim 16.

35. **Regarding claim 19, Amerga** in view of **Choi** discloses the method of claim 16, wherein, after being switched into the WCDMA idle state **(Amerga: Fig 5A, 5B & Col. 9 lines [12-17],[21-57])**, the MM-MB terminal deactivates the CDMA-2000 modem. This claim is rejected for the same motivation as claim 16 along with the claim 5 as method

of MM-MB terminal deactivating the modem after being switched to a particular state will remain identical.

36. **Regarding claim 20, Amerga** discloses a method of switching between a CDMA-2000 modem and a WCDMA modem of an MM-MB (multimode-multiband) terminal, when the MM-MB terminal being in a CDMA-2000 traffic state moves from a CDMA-2000 zone into an overlay zone, said method comprising the steps of:

(a) monitoring a paging channel of a CDMA-2000 system periodically while maintaining the MM-MB terminal in the CDMA-2000 traffic state and the CDMA modem in an activated state to handle a CDMA-2000 call **(Amerga: Fig 3:310-330 & Col 4 lines [48-52] that his invention can readily adaptable in any mode (i.e. traffic mode as well));**

(b) analyzing an overhead message received from the CDMA-2000 system and determining whether the MM-MB terminal is located in the overlay zone **(Amerga: Fig 5A: 504, 506, 508)**;

(c) if the MM-MB terminal is determined to be located in the overlay zone, determining whether the CDMA-2000 call has been terminated while maintaining the MM-MB terminal in the CDMA-2000 traffic state **(Amerga: Fig 3:350-360 & Col 4 lines [48-52] that his invention can readily adaptable in any mode (i.e. traffic mode as well))**;

(d) if the CDMA-2000 call is determined to have been terminated, activating the WCDMA modem **(Amerga discloses <u>cell selection</u> (when there is no cell selected, hence first time or when there is no modem active) and reselection method)**; and

(e) performing an initialization process for a WCDMA system **(Amerga: Fig 5A & 5B column 9 lines [12-17][21-57])** to switch the MM-MB terminal into a WCDMA idle state **(Amerga: Fig 3:370). However**, **Amerga** fails to disclose specifically Multi Mode-Multi Band terminal which has CDMA-2000 modem & WCDMA modem, **however**, **the examiner** maintains that it was well known in the art to provide a terminal with multi-mode multi-band which has CDMA modem and WCDMA modem which serves functionally same as MM-MB terminal as taught by **Choi (Choi: Fig 2, 3 & Column 3 lines [56-57] & Col 6 lines [58] - Col 7 lines [17]).**

37. **In** a similar field of endeavor **Choi** discloses a System and method for implementing a handoff using a multiparty service in a mobile communication system. In addition, **Choi** discloses Dual mode dual band which has CDMA & WCDMA modem.

38. **Therefore**, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify **Amerga** by specifically providing a terminal with multi-band multi mode which has CDMA modem and WCDMA modem as taught by **Choi** for the purpose of implementing handoff between heterogeneous networks **(Choi: Column 2 lines [41-45]).**

39. **Regarding claim 21, Amerga** in view of **Choi** discloses the method of claim 20, wherein the MM-MB terminal determines **(Amerga: Fig 5A, 5B)** whether the MM-MB terminal is located in the overlay zone by investigating a base ID of a system parameter message included in the overhead message analyzed at step (b). **Although Choi** discloses BSC ID, Cell ID **(Choi: Col 2 lines [20-35]). However**, **Amerga** in view of

Choi fails to disclose explicitly "by investigating a base ID of a system parameter message included in the overhead message analyzed at step (b)".

40. **However** it is obvious to one of ordinary skill in the art that one of the main advantages of implementing CDMA technology is the use of soft handoffs, which allows a mobile device to monitor multiple base stations simultaneously. Further, it is common practice for the current base station to provide information (*i.e.* PN code offsets) of the surrounding neighboring cells in order for the mobile device to easily monitor the signal strength of the handoff candidates in order to facilitate fast acquisition and accurate measurements during soft handover.

41. **Regarding claim 22, Amerga** in view of **Choi** discloses the method of claim 20, wherein, if the MM-MB terminal is not determined to be located in the overlay zone at step (b), the MM-MB terminal returns to step (a) to monitor the paging channel again **(Amerga: Fig 3:310-330).** This claim is rejected for the same motivation as claim 20.

42. **Regarding claim 23, Amerga** in view of **Choi** discloses the method of claim 20, wherein, after being switched **(Amerga: Fig 5A, 5B & Column 9 lines [12-17] [21-57])** into the WCDMA idle state, the MM-MB terminal deactivates the CDMA-2000 modem This claim is rejected for the same motivation as claim 20 along with the claim 5 as method of MM-MB terminal deactivating the modem after being switched to a particular state will remain identical.

43. **Regarding claim 24, Amerga** discloses a multimode-multiband terminal capable of accommodating both a synchronous CDMA-2000 service and an asynchronous WCDMA service and operating in at least two frequency bands, said terminal comprising:

an RF (radio frequency) antenna **(Amerga: Fig 2:210)** for transceiving a CDMA-2000 signal and/or a WCDMA signal;

an RF transceiver **(Amerga: receiver 220 in column 6 line [40])** coupled to the RF antenna for demodulating a WCDMA pilot signal received from the RF antenna and outputting the demodulated WCDMA pilot signal **(Amerga: output of demodulator 230 in column 6 lines [40])**;

a pilot signal measurement unit **(Amerga: Signal strength estimator 280 in Column 6 line[41])** coupled to the RF transceiver for measuring an intensity of the demodulated WCDMA pilot signal to generate an Ec/Io value;

a WCDMA modem **(Amerga: Modem described in column 6 line [32-34])** and a CDMA-2000 modem **(Amerga: Modem described in column 6 line [32-34])** coupled to the RF transceiver for processing a digital signal received from the RF transceiver **(Amerga: Receiver 220 in column 6 line [40] along with transmission capability described in column 6 lines [32-34])** and performing a call processing according to protocols defined by a WCDMA standard **(Amerga: Column 5 lines [17-21])** and a CDMA-2000 standard **(Amerga: Column 5 lines [17-21] & Column 3 lines [5-15])**, respectively;

a memory **(Amerga: Fig 2:270)** for storing a modem-to-modem switching program

configured **(Amerga: Column 6 lines [48-51])** for switching **(Amerga: Modem described in column 6 lines [12-17][21-57])** between the WCDMA modem **(Amerga: Modem described in column 6 lines [32-34])** and the CDMA-2000 modem **(Amerga: Modem described in column 6 lines [32-34])** based the Ec/Io value; and

a controller **(Amerga: Processor described in column 6 lines [37-55])** coupled to the pilot signal measurement unit, the memory and the WCDMA and CDMA-2000 modems for

(i) receiving the Ec/Io value from the pilot signal measurement unit **(Amerga: Column 8 lines [45-56])**, and

(ii) loading and executing the modem-to-modem switching program **(Amerga: Instructions described in column 6 lines [48-51])** from the memory to activate the CDMA-2000 modem **(Amerga: Modem described in column 6 lines [32-34] & activation takes place based on result of calculation of Squal & Srxlev which are based on Ec/Io along with the threshold values Qqualmin & Qrxlevmin)**, while the WCDMA modem is still being activated **(The examiner assumes this feature as "While the MM-MB terminal is handling the CDMA2000 call by the active CDMA modem" i.e. process of soft handover)**, if a time lapse, during which the Ec/Io value remains lower than a predetermined CDMA-2000 ON threshold THoN **(Amerga: $S_{intrasearch}$ Floor (higher threshold))**, is greater than a preset CDMA-2000 ON condition time Hd. **However**, **Amerga** fails to disclose specifically Multi Mode-Multi Band terminal which has CDMA-2000 modem & WCDMA modem, **however**, the examiner maintains that it was well known in the art to provide a terminal with multi-mode multi-band which

has CDMA modem and WCDMA modem which serves functionally same as MM-MB terminal as taught by **Choi (Choi: Fig 2, 3 & Column 3 lines [56-57] & Col 6 lines [58] - Col 7 lines [17]).**

44. **In** a similar field of endeavor **Choi** discloses a System and method for implementing a handoff using a multiparty service in a mobile communication system. In addition, **Choi** discloses Dual mode dual band which has CDMA & WCDMA modem.

45. **Therefore**, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify **Amerga** by specifically providing a terminal with multi-band multi mode which has CDMA modem and WCDMA modem as taught by **Choi** for the purpose of implementing handoff between heterogeneous networks **(Choi: Column 2 lines [41-45]).**

46. **Regarding claim 25, Amerga** in view of **Choi** discloses The multimode-multiband terminal of claim 24, wherein the controller **(Amerga: Processor described in column 6 lines [37-55])** loads the modem-to-modem switching program **(Amerga: Column 6 lines [48-51])** at the moment the Ec/Io value starts to be lower than the CDMA-2000 ON threshold THoN or when it is determined that the multimode-multiband terminal enters an overlay zone by analyzing system information. This claim is rejected for the same motivation as claim 24.

47. **Regarding claim 26, Amerga** in view of **Choi** discloses the multimode-multiband terminal of claim 24, wherein, only after the CDMA-2000 modem has been

activated and an initialization into a CDMA- 2000 system has been completed so that the multimode-multiband terminal has been completely switched into a CDMA-2000 idle state, does the controller deactivate the WCDMA modem. **However, Amerga** fails to disclose explicitly "the controller deactivates the WCDMA modem" as a part of cell reselection/hand off.

48. **However** it is obvious to one of the ordinary skill in the art that when switching modems in a MM-MB for the purpose of handover, it is necessary to deactivate the modem which is not being used for the purpose of conserving power as disclosed my **Amerga (Amerga: Abstract)**.

49. **Regarding claim 27, Amerga** in view of **Choi** discloses the multimode-multiband terminal of claim 24, wherein, even if the CDMA-2000 modem has been activated, based on the Ec/Io value being lower than THoN during the time lapse greater than Ha, the controller still deactivates the CDMA-2000 modem if another time lapse, during which the Ec/Io value is maintained higher than a predetermined CDMA-2000 OFF threshold THoFF, is greater than a preset CDMA-2000 OFF condition time Hc, wherein THoN is greater than THoFF **(Amerga: Fig 5A, 5B & column 9 lines [06-23] & $S_{intrasearch}$ Floor (higher threshold))**. This claim is rejected for the same motivation as claim 24.

50. **Regarding claim 28, Amerga** in view of **Choi** discloses the multimode-multiband terminal of claim 24, wherein, only after the WCDMA modem has been

activated and an initialization into a WCDMA system has been completed so that the multimode-multiband terminal has been completely switched **(Amerga: Fig 5A, 5B & Column 9 lines [12-17][21-57])** into a WCDMA idle state, does the controller deactivate the CDMA-2000 modem. This claim is rejected for the same motivation as claim 24 along with claim 5 as method of MM-MB terminal deactivating the modem after being switched to a particular state will remain identical.

51. **Regarding claim 29, Amerga** in view of **Choi** discloses the multimode-multiband terminal of claim 27, wherein information upon the CDMA-2000 ON threshold THoN, the CDMA-2000 ON condition time Hd, the CDMA-2000 OFF threshold THoR and the CDMA-2000 OFF condition time Hc are stored in the memory. This claim is rejected as **Amerga** discloses a processor 260 connected to memory which stores data along with instruction for performing various procedures and methods **(Amerga: Column 6 lines [47-51]).** This claim is rejected for the same motivation as claim 27.

52. **Regarding claim 30, Amerga** in view of **Choi** discloses the multimode-multiband terminal of claim 24, further comprising a timer for measuring the time lapse and reporting the time lapse to the controller **(Amerga: Fig 5A & Col. 10 lines [44-49] discloses a timer that indicates how long (time lapse) the cell has met the selection criteria)**. This claim is rejected for the same motivation as claim 24.

Response to Arguments

53. Applicant's arguments filed 03/10/2009 have been fully considered but they are not persuasive.

a. Applicant's argument on page 11 ¶ 0005 – page 12 ¶ 0003 & page 14 ¶ 0002, page 14 ¶ 0006, page 14 ¶ 0008 regarding claim 1,16 & 20, 24 both the modem are active and prior art teaches away as it discloses sleep mode in which majority of circuitry is turned off to conserve power, however, the examiner respectfully disagree as disclosed by Amerga invention is regarding limiting cell reselection/handoff based on pilot power (Amerga: abstract & Col 4 lines [45-49]) between CDMA 2000 and WCDMA systems. In wireless systems soft handover (or make before break handover that tries to connect second base station while already active on camped/home base station and once the second connection is confirmed it releases first connection) is known in the art, Amerga discloses cell reselection if the threshold is reached for given time frame, else not performing cell reselection i.e. remaining in the same cell (hence soft hand off) while at the border of cell (i.e. remaining in the first cell).

b. Applicant's argument on page 12 ¶ 0004 – page 13 ¶ 0001 regarding claim 6 is directed to the traffic state while cited teaching of Amerga is directed to the sleep mode or idle state. However the examiner respectfully disagree as Amerga clearly discloses in Col 4 lines [48-52] that his invention can readily adaptable in any mode (i.e. traffic mode as well).

c. Applicant's argument on page 13 ¶ 0002 - ¶ 0003 regarding Choi failing to

disclose MM-MB terminal moving away from the overlay zone into a CDMA-2000 zone while handling a WCDMA call, however the examiner respectfully disagree as Choi discloses method for implementing a handoff using a multiparty service (heterogeneous networks CDMA and WCDMA) in mobile communication system, hence a presence of handoff while handling WCDMA call.

d. Applicant's argument on page 13 ¶ 0004 – page 14 ¶ 0001, page 14 ¶ 0009 regarding claim 9 & 27, Amerga discloses only activation of new modem rather then deactivating an old one, however, the examiner respectfully disagree as Amerga discloses cell selection/reselection (hand off), it is well known in art that in hand off process when the handoff is complete, first connection is tear off as its no longer needed (in this case due to Inter-Radio Access Technology (Inter-RAT) hand off , related hardware needs to be turned off to save energy).

e. Applicant's argument on page 14 ¶ 0003 – page 14 ¶ 0005, ¶ 0007 regarding claim 17 & 21 that obviousness is not evidentially supported, however, the examiner respectfully disagree as Choi as cited above discloses BSC ID (base station controller ID), Cell ID, PN Offset (Choi: Col 2 lines [20-35]) for specific use of border node id please refer US PAT # 5,917811 (published on Jun 29, 1999) that discuses providing border node id (US PAT # 5,917811: ¶ 103 discloses use of base station id to trigger a handoff with a target base station, hence border base station id.) Applicant further argues that Amerga is about switching cells and fails to teach handoff based on base id of the terminal, however, the examiner respectfully disagrees as claimed invention is directed

primarily toward handoff based on Ec/Io value detected, Only claims 17 and 21 is directed towards use of Base station ID. Claims 17 and 21 are rejected as cited above.

Conclusion

54. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. US PAT # 5,917811 - Method and apparatus for measurement directed hard handoff in a CDMA system.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Munjal Patel whose telephone number is (571)270-5541. The examiner can normally be reached on Monday - Friday 9:00 AM - 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rafael Perez-Gutierrez can be reached on 571-272-7915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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